

FLOWER FLIES (DIPTERA: SYRPHIDAE) OF CHRISTMAS ISLAND, INDIAN OCEAN

F.C. THOMPSON

Department of Entomology, Smithsonian Institution, PO Box 37012, Washington, DC 20013-7012, USA

Abstract

The flower flies (hover flies) of Christmas Island (Indian Ocean) are reviewed. Seven species are recorded, more than double those previously reported from the island, viz: *Asarkina incisuralis* (Macquart, 1855), *Dideopsis aegrota* (Fabricius, 1805), *Episyrphus viridaureus* (Wiedemann, 1824), *Ischiodon scutellaris* (Fabricius, 1805), *Eumerus figurans* Walker, 1859, *Eristalinus arvorum* (Fabricius, 1787) and *Syritta maritima* Hull, 1944. The holotype of the endemic *S. maritima* is illustrated.

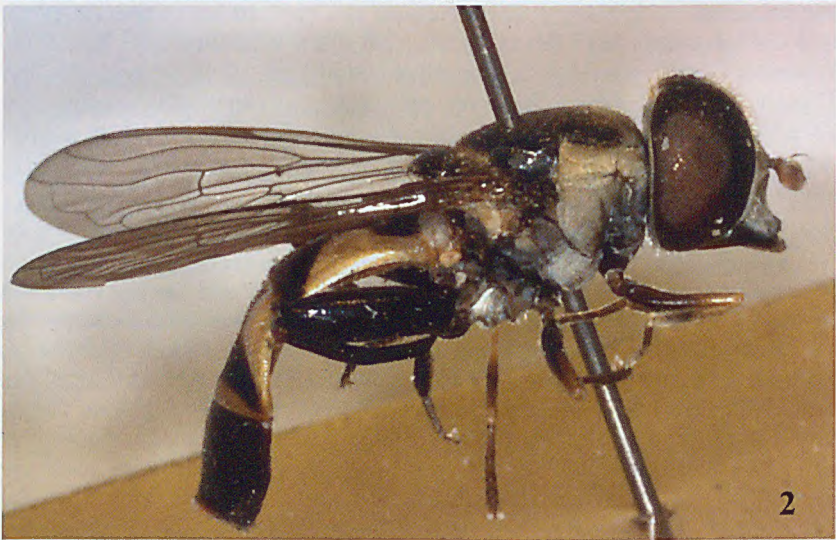
Introduction

Christmas Island is an Australian Territory about 338 km (210 miles) due south of Jakarta on the Indonesian island of Java. Unlike most other Australian territories, it falls within the Oriental biotic region. The island is only some 135 square kilometres (52 square miles) in extent and about two-thirds are preserved as a National Park. Little has been published on the entomological fauna of the island and what has been published contains little about the flower flies, also known as hover flies.

Lister (1889) provided the first monograph on the island with a description of the fauna and flora. Kirby (1889) described two new species of flies (Asilidae and Calliphoridae) from this collection, but did not mention any other flies. Andrews (1900) provided an expanded monograph of the island, but the Diptera were not treated in detail and only one (unnamed) species was indicated for Syrphidae.

Tweedie (1933) reported on some insects from the island and for Syrphidae listed a *Xylota* Meigen species and two *Syrphus* Fabricius species [this report was part of Chasen's (1933) overview of the fauna]. In The Natural History Museum (BMNH), London, there is material of three species, some of which is apparently the earlier material reported by Tweedie and the rest collected by a 'Dr C. A. Gibson-Hill' in 1939-40. Campbell (1964) provided an unpublished report on his entomological survey and listed three syrphids, an *Eristalis* Latreille species and two other unnamed species. His material is now in the Australian National Insect Collection (ANIC), Canberra and is reported below. The Oriental Diptera catalogue under Syrphidae (Knutson *et al.* 1975) listed only one species from Christmas Island (*Syritta maritima* Hull: Figs 1-2). Josephine Cardale collected on the island in April 1989 and her material is also in ANIC. Finally, a survey of pest insects of Christmas and the Cocos (Keeling) Islands was published by Bellis *et al.* (2004) but no flower flies were listed. Only one endemic flower fly species, *Syritta maritima*, is known, but it has not been recovered in recent surveys.

In summary, only three publications mention Syrphidae and at the most only three species but, except for the new species (*Syritta maritima*), these were not named. Below, I summarise information on the seven species now in ANIC and BMNH. Inquiries were made but no material was found in the Australian Museum, Sydney (AMS) or Raffles Museum, Singapore (RMS).



Figs 1-2. *Syritta maritima* Hull, holotype female: (1) dorsal habitus; (2) lateral habitus. Photographs © Natural History Museum, London.

Checklist

Subfamily Syrphinae

Tribe Syrphini

Asarkina incisuralis (Macquart, 1855: 94 (114), *Syrphus*). This species, originally described from Java, is the proper name for the widespread species of the genus *Asarkina* Macquart (1842: 77 (137)) in the Oriental and Australian Regions. Unfortunately, the nomenclature of this species has been confused, as in the Australian and Oriental Region the species has been called *salviae* Fabricius (1787: 340, *Syrphus*, type-locality: Sierra Leone) (see for example, Curran 1942: 5 and 1947: 4), or *ericetorum* Fabricius (1781: 425, *Syrphus*, type-locality: South Africa, Cape Region [as 'Africa Aequinoctiali'] Banks Collection (BMNH)) (Brunetti 1923: 63 (India); Hardy 1933: 15 (Australia)). Fabricius (1805: 250) was the first to recognize that his two names applied to the same species, but used the junior name as valid! However, *ericetorum* as recognized here is restricted to the Afrotropical Region and differs from *incisuralis* in having the male frontal triangle or female frons entirely black pilose, not yellow pilose.

Dideopsis aegrota (Fabricius, 1805: 243, *Eristalis*). This species, originally described from India (Tamil Nadu: Tharangambadi), is widespread throughout the Oriental and Oceanian Regions and is also found in New Guinea and Australia. The larvae are generalist predators of homopterous pests, mainly aphids. Cardale collected six specimens in late April (ANIC, USNM) around South Point and near Greta Beach.

Episyrphus viridaureus (Wiedemann, 1824: 35, *Syrphus*). This species, originally described from Java, is widespread in the Oriental Region, extending eastward to New Caledonia and Australia (see Wright and Skevington 2013 for latest revision). The larvae are generalist predators of homopterous pests, mainly aphids. Campbell collected two females from South Point Settlement in late September (ANIC, USNM).

Ischiodon scutellaris (Fabricius, 1805: 252, *Scaeva*). This species, also originally described from India (Tamil Nadu: Tharangambadi), is widespread throughout the Oriental and Oceanian Regions and also occurs in New Guinea and Australia. The larvae are generalist predators of homopterous pests, mainly aphids. Cardale collected four specimens in late April (ANIC, USNM) around South Point and near Greta Beach. In the Natural History Museum (BMNH) there is a female from 'The Cove' collected on 27 October 1904 and two males collected by C. A. Gibson-Hill in 1939-40.

Subfamily Eristaliinae

Tribe Merodontini

Eumerus figurans Walker (1859: 121). This species, originally described from A. R. Wallace material collected at Makassar, Sulawesi, is a widespread

pest of plant tubers and bulbs and is found throughout the Oriental and much of the Oceanian Regions as well as in Australia, with occasional interceptions in the USA. Campbell collected three individuals (Drumsite, Cooke's Garden Settlement and Waterfall Pumping Station) in late September and early October (ANIC, USNM). In the Natural History Museum (BMNH) there are now three females, two apparently from Tweedie [Brit. Mus. 1934-32 accession] and one later collected by C. A. Gibson-Hill in 1939-40.

Tribe Eristaliini

Eristalinus arvorum (Fabricius, 1787: 335, *Syrphus*). This species, originally described from China, is a widespread parasynanthropic species ranging from the Seychelles to Japan and south to Australia. The larvae are rat-tailed maggots living in wet areas with rotting material on which they filter feed. Thirty females were collected at South Point by Campbell in late October (ANIC, USNM) and one female was collected by C. A. Gibson-Hill (BMNH).

Tribe Milesiini

Syritta maritima Hull, 1944. This species (Figs 1-2), described from three females collected on 1 April 1933 by Dr Harms, is the only known endemic Christmas Island flower fly (see Lyneborg and Barkemeyer 2005: 208 for latest taxonomic treatment). The species is very distinctive as it is much larger than other *Syritta* Lepeletier & Serville (1828: 808) species. Some *Syritta* species are common parasynanthropic species (such as *flaviventris* Macquart and *pipiens* Linnaeus), but apparently none of these has become established on Christmas Island. Unfortunately, no additional specimens of *S. maritima* have been collected, which suggests the species might be extinct.

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